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For my lovely daughter Eleanor.
And to Adam, for his unwavering love and support.

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ABSTRACT

Prevalence, Risk Factors, and Sequelae of Peripheral Neuropathy in a Population-Based Cohort of Mid-Life Women

by

Kelly Renee Ylitalo

Chair: Siobán D. Harlow and MaryFran R. Sowers (Deceased)

Peripheral neuropathy is a well-documented complication of diabetes, yet it remains an underappreciated condition in non-diabetic individuals. Studies of neuropathy in longitudinal or population-based samples are limited. The goal of this dissertation was to document the burden, risk factors, and sequelae of peripheral neuropathy in a population-based sample of Caucasian and African American women in the United States.

This dissertation utilized 1996-2008 data from the Study of Women's Health Across the Nation – Michigan site. Annual anthropometric and performance-based physical functioning measures were collected and peripheral neuropathy was assessed in 2008 using three independent assessment methods. We described the associations between individual characteristics and neuropathy, and determined if anthropometric and

physical functioning trajectories differed between women who did and did not have prevalent neuropathy in 2008.

The prevalence of peripheral neuropathy was substantial and ranged from 14.3% to 20.0% depending on assessment method. On average, body mass index, weight, and waist circumferences increased over time and differed significantly at baseline through 2008 between women who did and did not have neuropathy in 2008, even among women without diabetes. However, when we examined trajectories of anthropometric measures, slopes did not differ, suggesting that age-related increases in body size were constant over time between women who did and did not have peripheral neuropathy in 2008.

On average, physical functioning declined over time and differed significantly between women who were and were not found to have neuropathy in 2008. Women who had peripheral neuropathy in 2008 had poorer physical functioning, and for some measures, a steeper rate of decline over time, than women who did not have neuropathy in 2008.

This dissertation expands our understanding of the burden of peripheral neuropathy in mid-life women. The high prevalence of neuropathy is a growing public health problem and is underappreciated as a potential cause of functional decline. Clinicians should implement peripheral neuropathy testing for individuals of the general population who exhibit diminished functional capacity. The co-occurrence of peripheral neuropathy

with obesity and poor physical functioning may explain the high prevalence of disability reported among women in the United States and deserves further research.